

Cost-Benefit analysis

Name of the project: Modification to Stage II approved FC proposal involving diversion of 103.60 Ha of Forest Land in Jankal Reserve Forest of Hosadurgha Range, Chitradurgha Forest Division for Construction of Chitradurga Branch Canal.

Category of proposals for which Cost Benefit Analysis are applicable

Sl.No.	Nature of proposal	Applicable/ Not applicable	Remarks
1	All categories of proposals involving forest land upto 20 Ha in Plains and upto 5Ha in hills.	Not applicable	Nil
2	Proposals for defense installation purposes and oil prospecting (Prospecting only)	Not applicable	Nil
3	Habitation, establishment of industrial units, tourist lodges/complex and other building constructions.	Not applicable	Nil
4	All other proposals involving forest land more than 20 Ha in plain and more than 5Ha in hills including roads, transmission lines, minor medium and major irrigation projects, hydel projects, mining activities, Railway lines, location specific installation like Micro-wave station, auto repeater enter, TV towers, etc.	Applicable	These are cases where a cost benefit analysis is necessary to determine whether diverting the forest land to non forest use is in the overall public interests.
5	Proposal for renewal of Mining Lease for forest land.	Not Applicable	Nil


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ಭದ್ರಾ ಮೇಲ್ದಂಡೆ ಯೋಜನೆ ವಿಭಾಗ ನಂ. 4
ಹೊಸದುರ್ಗ-577527, ಜಿಲ್ಲಾ ಚಿತ್ರದುರ್ಗ

Cost Benefit analysis

I-Calculatation of the Cost

Parameters for Evaluation of Loss of Forests

Name of the Project : Construction of Chitradurga Branch Canal of Upper Bhadra
Project. Quantum of Forest Applied For : 103.60 Ha
Life of Project : 50 Years
Division : Division No.4, UBP, VJNL, Hosadurga

Sl. No	Parameter	Criteria	Cost per Year (lakhs)	Cost for 50 years (lakhs)
1	Ecosystem services losses due to proposed forest diversion	Economic Value of loss of eco-system services due to diversion of forest shall be the Net Present Value (NPV) of the forest land being diverted as prescribed by the Central Government (MoEF&CC). Present NPV for 1 Ha of forest land = 6.26 lakhs (density of 0.4) Present NPV for 103.60 Ha Forest land = 103.60 X 6.26=648.536 lakhs	648.536	32,426.8
2	Loss of animal Husbandry Productivity, Including loss of Fodder.	10% of the NPV	64.8536	3,242.68
3	Possession Value of the Forest land Diverted	30% of the NPV	194.5608	9,728.04
4	Habitat Fragmentation Cost	50% of the NPV	324.268	16,213.4
5	Compensatory afforestation and Soil & moisture conservation cost	Rate of C.A. for 1 Ha of forest land = 15.93 Lakhs (2015-16) Value of C.A. for 103.60 Ha Forest land = 103.60 X 15.93	1,650.348	82,517.4
		Total	2,882.566	1,44,128.32


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Cost Benefit analysis

II-Calculcation of the Cost

Parameters for Evaluation of Loss of Forests

(Not withstanding loss of forest)

Sl. No	Parameter	Criteria	Cost per Year (lakhs)	Cost for 50 years (lakhs)
1	Increase in Productivity attribute to the Specific project	Net value of the Produce = Total gross receipts – Total Expenses	1,41,391.00	70,69,550.00
2	Befits to economy due to the Specific project	Net Annual benefits	1,62,511.00	81,25,550.00
3	No of Population Benefited due to specific project	In 8 taluks as per 2011 Census	18,86,977 People	
4	Economic benefits due to of direct and indirect employment due to this project	Total employment =800 (Per day wages as per minimum wages notifications 2016-2017)	-	
		40 skilled employees X Rs. 261.87/- (per day) =Rs. 10,474.80/- Rs. 10,474.80/- (per day) X 30 days X 12 months = Rs. 37,70,928.00/-p.a.	37.70	1,885.50
		760 unskilled employees X Rs. 259.28/- (per day) = Rs. 1,97,052.80/- Rs. 1,97,052.80/- (per day) X 30 days X 12 months = Rs. 7,09,39,008.00/-p.a.	709.39	35,469.50
5	Economic benefits due to Compensatory afforestation	Value of Corban sequestration per Ha/year = Rs. 1,20,780/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 1,25,12,808/-	125.12	6,256.00
		Value of Bio-Prospecting per Ha/year = Rs. 25,553/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 26,47,290.8/-	26.47	1,323.5
		Value of NTFP per Ha/year = Rs. 7,631/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 7,90,571.6/-	7.90	395.00
		Value of Eco-tourism per Ha/year = Rs. 65,113/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 67,45,706.8/-	67.45	3,372.5
		Value of fodder per Ha/year = Rs. 7631/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 7,90,571.6/-	7.90	395.00
		Value of Flagship species per Ha/year = Rs. 2,58,400/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 2,67,70,240/-	267.70	13,385.00
		Value of Ecological services of forests per Ha/year = Rs. 1,44,332/- (per Ha/Yr) X 103.60 Ha (Forest land) = Rs. 1,49,52,795.2/-	149.52	7,476.00
			3,05,301.15/-	1,52,65,058.00/-

Cost Benefit analysis

III-Calculation of the Cost

Total Benefits (As per II calculations) = Rs. 1,52,65,058.00 Lakhs

Total Losses (As per I calculations) = Rs. 1,44,128.32 Lakhs

Hence, Benefit/Cost Ratio $\frac{1,52,65,058.00}{1,44,128.32} = 105.912$

Thus, the project gives positive Benefit/Cost Ratio with minimal environmental losses.


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